



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------|-------------|----------------------|---------------------|-------------------|
| 10/057,779 | 01/24/2002 | Tomonobu Matsuda | KNI-159-A | 9335 |
| 21828 | 7590 | 02/13/2004 | EXAMINER | |
| CARRIER BLACKMAN AND ASSOCIATES | | | | AL NAZER, LEITH A |
| 24101 NOVI ROAD | | | | |
| SUITE 100 | | | | |
| NOVI, MI 48375 | | | | |
| | | | | ART UNIT |
| | | | | PAPER NUMBER |
| | | | | 2828 |

DATE MAILED: 02/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/057,779 | MATSUDA ET AL. | |
| | Examiner Leith A Al-Nazer | Art Unit 2828 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 24 December 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-3,6-10,13-15 and 17-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 1,7-10 and 13 is/are allowed.

6) Claim(s) 2,3,6,14,15 and 17-21 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Paul J

PAUL IP

**SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ .

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____ .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 3, 6, 14, 15, and 17-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 2 and 14 do not claim the main aspect of the invention. Both claims fail to provide structure for preventing the pumping of laser light from irradiating back upon the semiconductor laser, which is the main focus of the invention (see page 5, lines 18-25 of the specification).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 2, 6, and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by DeFreez et al '642.

With respect to claims 2, 6, 20, and 21, DeFreez teaches a light scattering particle detector for detecting particles contained in sample fluid which defines a flow path, the particle detector comprising a semiconductor laser (“Diode Laser Pump” in figure 1) and a concave mirror (66) disposed between the flow path and the semiconductor laser, wherein laser light generated from the semiconductor laser is condensed to irradiate upon the flow path with the concave mirror and thereby a particle detecting region is defined.

With respect to claims 18 and 19, DeFreez teaches a laser oscillator in which pumping laser light (“Diode Laser Pump” in figure 1) generated from a semiconductor laser is condensed to irradiate upon a laser medium (64) with a condenser lens (“Mode Matching Optics” in figure 1), the laser medium being pumped, and thereby laser light is irradiated, wherein the optical axis of the semiconductor laser has a predetermined angle with respect to the optical axis of the laser medium.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 2828

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeFreez et al '642.

With respect to claims 14, 15, and 17, DeFreez teaches a laser oscillator in which pumping laser light generated from a pumping light source ("Diode Laser Pump" in figure 1) is condensed to irradiate upon a solid-state laser (64) with a condenser ("Mode Matching Optics" in figure 1) and laser light irradiated from the solid-state laser is allowed to reflect back to the solid-state laser from a reflector (48). Claims 14 and 15 require at least one of the condenser and the reflector have a surface having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path. The radii of curvature of both the condenser and the reflector would be a matter of design choice based on the desired focal length and concentration of light required by one's system.

Claims 1, 7-10, and 13 are allowed.

Response to Arguments

8. Applicant's arguments filed on 24 December 2003 have been fully considered but they are not persuasive.

With respect to the rejection of independent claims 2 and 14 under 35 USC 112 2nd paragraph, Applicant argues that the prevention of the pumping laser light from irradiating back upon the semiconductor laser is only one focus of the present invention. Examiner disagrees. All the embodiments, which are summarized on pages 5-12 of the specification, mentions either

1) a concave mirror or 2) a core axis which forms a predetermined non-linear angle with respect to the optical axis of the laser medium. The concave mirror is the element that allows for the predetermined non-linear angle mentioned in several of the aspects of the present invention. Therefore, a concave mirror must be recited in each of the independent claims since it is the critical structure that allows for the “predetermined angle” to be achieved.

With respect to the art-based rejections for independent claim 2, Applicant argues, “While DeFreez’s detector includes a concave mirror...such mirror is semi-transparent and has a different function and different position/arrangement than the claimed concave mirror.” However, Examiner believes that Applicant has not provided enough structure in claim 2 to distinguish the concave mirror of the present invention over the concave mirror taught by DeFreez. Specifically, Applicant does not claim the properties of the concave mirror (high-reflectivity, etc.) and does not provide enough structural relationships between the concave mirror and the other elements in the system in order to distinguish over the prior art.

With respect to the art-based rejections for independent claim 14, Applicant argues that “the claimed features are not all suggested by DeFreez’s disclosure.” Specifically, Applicant states that “DeFreez’s HR resonant mirror 66 does not condense light from the laser to irradiate upon the solid-state laser crystal 44.” Examiner disagrees. Examiner believes figure 1 of DeFreez shows the resonant mirror 66 condensing light from the laser to irradiate upon the solid-state laser crystal 44.

With respect to the art-based rejections for independent claim 18, Applicant argues that “DeFreez’s detector does not include or suggest the claimed feature of determining an angle (predetermined angle) between the semiconductor laser and the laser medium so as to prevent the

pumping of laser light from being incident on the light emitting portion of the semiconductor laser as feedback light..." Examiner is unsure of what the term "predetermined angle" implies. For example, is the "predetermined angle" determined by a manual calculation, or is it determined by the apparatus. If it is determined by the apparatus of the present invention, then structure which is capable of calculating the "predetermined angle" must be incorporated into the claim.

Communication Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A Al-Nazer whose telephone number is 571-272-1938. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 571-2721941. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LA


PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

